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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,611	04/24/2007	Chunfu Chen	ICC-294/PCT/US	8399

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EXAMINER	
FEELY, MICHAEL J	
ART UNIT	PAPER NUMBER
1796	
MAIL DATE	DELIVERY MODE
12/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,611	CHEN ET AL.	
	Examiner	Art Unit	
	Michael J. Feely	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 6-13* is/are rejected.

7)☒ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20090814*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 1-13 are pending.

Claim Objections

1. Claims 4 and 5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim *cannot depend from any other multiple dependent claim*. See MPEP § 608.01(n). Accordingly, the claims 4 and 5 have ***not been further treated on the merits***.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-8, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Williamson et al. (US Pat. No. 5,730,764).

Regarding claims 1-3, 6-8, 10, and 11, Williamson et al. disclose: ***(1)*** cationically curable epoxy resin composition (Abstract; column 2, line 65 through column 3, line 9) comprising: (a) an epoxy resin component (column 3, line 10 through column 9, line 45); (b) a cationic photo-initiator (column 9, line 46 through column 11, line 30); (c) a cationic thermal-initiator (column 11, lines 31-36); and (d) a filler selected from the group consisting of oxides,

hydroxides and carbonates containing a Group II element in the long periodic table (column 12, lines 4-11: *see calcium carbonate*);

(2) wherein the composition comprises 0.1 to 10 parts by weight of cationic photo-initiator (column 9, lines 46-50), 0.01 to 5 parts by weight of the cationic thermal-initiator (column 11, lines 31-36), and 1 to 100 parts by weight of the filler (column 12, lines 4-11) each based on the 100 parts by weight of the epoxy resin component; ***(3)*** wherein the epoxy resin component comprises an epoxy resin having aromatic ring (column 3, line 10 through column 6, line 48);

(6) wherein the cationic photo-initiator is a salt represented by A^+B^- which produces cationic active species by irradiation of light; the cation A^+ selected from the group consisting of aromatic iodonium ions and aromatic sulfonium ions (column 9, line 51 through column 11, line 30); ***(8)*** wherein the anion B^- in the cationic photo-initiator is selected from the group consisting of SbF_6^-, PF_6^-, AsF_6^-, BF_4^-, and $B(aryl)_4^-$ (column 9, lines 57-65; column 10, lines 44-50; column 11, lines 26-30);

(7) wherein the cationic thermal-initiator is a salt represented by A^+B^- which produces cationic active species by heat; the cation A^+ is selected from the group consisting of sulfonium ions in which at least one among three groups bonding to the S-atom is alkyl group and sulfonium ions in which two among three groups bonding to the S-atom form together an alkylene group to form a ring with S-atom (column 11, lines 31-36);

(10) further comprising a polyol compound (column 11, lines 53-57); and

(11) wherein the Group II element in the (C) filler is selected from the group consisting of magnesium, calcium and barium (column 12, lines 4-11: *see calcium carbonate*).

4. Claims 1, 3, 6, 8 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Tumey et al. (US Pat. No. 4,836,832).

Regarding claims 1, 3, 6, 8, and 11-13, Tumey et al. disclose: ***(1)*** cationically curable epoxy resin composition (Abstract; column 2, lines 36-58) comprising: (a) an epoxy resin component (column 4, line 52 through column 6, line 68); (b) a cationic photo-initiator (column 7, line 1 through column 10, line 37); (c) a cationic thermal-initiator (column 10, line 50 through column 11, line 20); and (d) a filler selected from the group consisting of oxides, hydroxides and carbonates containing a Group II element in the long periodic table (column 11, lines 26-37: *see calcium carbonate, magnesia (MgO)*);

(3) wherein the epoxy resin component comprises an epoxy resin having aromatic ring (column 5, lines 8-37);

(6) wherein the cationic photo-initiator is a salt represented by A^+B^- which produces cationic active species by irradiation of light; the cation A^+ selected from the group consisting of aromatic iodonium ions and aromatic sulfonium ions (column 8, lines 26-48); ***(8)*** wherein the anion B^- in the cationic photo-initiator is selected from the group consisting of SbF_6^-, PF_6^-, AsF_6^-, BF_4^-, and $B(aryl)_4^-$ (column 8, lines 26-48);

(11) wherein the Group II element in the (C) filler is selected from the group consisting of magnesium, calcium and barium (column 11, lines 26-37: *see calcium carbonate, magnesia (MgO)*); ***(12)*** wherein the Group II element in the (C) filler is magnesium (column 11, lines 26-37: *see magnesia (MgO)*);

(13) wherein the (C) filler is selected from the group consisting of MgO, $Mg(OH)_2$, talc, cordierite, magnesium meta-silicate and magnesium ortho-silicate (column 11, lines 26-37: *see magnesia (MgO)*).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al. (US Pat. No. 5,730,764) in view of Tumey et al. (US Pat. No. 4,836,832) or Takahashi et al. (JP 05-171084 A).

Regarding claim 9, the teachings of Williamson et al. are as set forth above and incorporated herein. They disclose the use of a cationic thermal initiator; however, they fail to explicitly disclose: ***(9)*** wherein the anion B^- in the cationic thermal-initiator is selected from the group consisting of SbF_6^-, PF_6^-, AsF_6^-, BF_4^-, and $B(aryl)_4^-$.

The teachings of Tumey et al. *(see column 10, lines 50-55)* and the teachings of Takahashi et al. *(see paragraphs 0027-0032)* demonstrate that the instantly claimed anions are recognized in the art as suitable anions for cationic thermal initiators. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the instantly claimed anions for the cationic thermal initiators of Williamson et al. because the teachings of Tumey et al. and Takahashi et al. demonstrate that the instantly claimed anions are recognized in the art as suitable anions for cationic thermal initiators.

7. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al. (US Pat. No. 5,730,764) in view of Tumey et al. (US Pat. No. 4,836,832).

Regarding claims 12 and 13, the teachings of Williamson et al. are as set forth above and incorporated herein. They disclose an unlimited list of mineral fillers, including calcium carbonate *(see column 12, lines 4-11)*; however, they fail to explicitly disclose: ***(12)*** wherein the Group II element in the (C) filler is magnesium; and ***(13)*** wherein the (C) filler is selected from the group consisting of MgO, $Mg(OH)_2$, talc, cordierite, magnesium meta-silicate and magnesium ortho-silicate.

The analogous teachings of Tumey et al. are as set forth above and incorporated herein. The teachings of Tumey et al. demonstrate that magnesia (MgO), along with calcium carbonate, is recognized in the art as suitable filler for this type of composition *(see column 11, lines 26-37)*. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use magnesium-based fillers, including MgO, as the filler in the composition of Williamson et al. because the teachings of Tumey et al. demonstrate that magnesia (MgO), along with calcium carbonate, is recognized in the art as suitable filler for this type of composition.

X-References from the International Search Report

8. The international search report cites two X-references: JP 05-171084 A, and JP 09-080251 A. Both references have been considered; however, neither one has been applied as primary prior art. JP 05-171084 discloses a similar system; however, they fail to disclose the instantly claimed filler. JP 09-080251 A discloses a similar system; however, they fail to disclose the instantly claimed combination of initiators.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

December 19, 2009